

REMARKS

Reconsideration of the present application is requested. Claims 1-23 are pending.

PRIOR ART REJECTIONS

REJECTION UNDER 35 U.S.C. § 103 IN VIEW OF MIYATA, DAVIS AND GAALEMA

The Examiner continues to reject claims 1-2, 4-8, 10-14 and 16-22 under 35 U.S.C. § 103(a) as unpatentable over 2002/0033789 ("Miyata") in view of U.S. Patent No. 5,027,111 ("Davis") and further in view of U.S. Patent No. 5,694,147 ("Gaalema"). Applicant continues to disagree with the Examiner's rejection for the following reasons.

Response to Examiner's Rebuttal Arguments

In response to Applicant's argument that Gaalema refers only to ambient temperatures, but not temperature of an LCD, the Examiner states:

The sensing element [of Gaalema] is placed in close proximity to the LCD so it would also detect the temperature of the LCD panel as well as the temperature.

Office Action at 13.

But, the fact that the sensing arrangement 26 is placed in close proximity to an LCD means, at most, only that the temperature of the LCD arguably *influences* the ambient temperature sensed by the sensing arrangement 26 of Gaalema; *not* that the temperature of the LCD is the same

as the ambient temperature. In the least, the ambient temperature is also likely to be influenced by other elements/components, and thus, the ambient temperature is not the temperature of the LCD panel. The fact remains that Gaalema discloses a sensing arrangement 26 that detects ambient temperature, but *not* the temperature of an LCD panel.

In response to Applicant's argument that Gaalema is silent with regard to controlling start and stop of heating by the heater such that "a temperature of the liquid crystal panel," is "*not more than $\pm 3^{\circ}\text{C}$ of a predetermined target temperature,*" as required by claim 1, the Examiner states:

...Gaalema was not used to reject this limitation of the claims. Gaalema was cited merely to show a target temperature and an LCD panel being maintained at that temperature.

Office Action at 14.

But, in rejecting claim 1 on page 3 of the Office Action, the Examiner states, "Miyata and Davis *do not* disclose a temperature of an LCD panel not more than $\pm 3^{\circ}\text{C}$ of a predetermined target temperature," and further states, "Gaalema discloses a temperature of LCD panel not more than $\pm 3^{\circ}\text{C}$ of a predetermined target temperature (col. 5, line 55-col. 6, line 30)." (*emphasis added*). Thus, the Examiner's rebuttal arguments on page 14 of the Office Action are in *direct contrast* to the statements made on page 3 of Office Action in rejecting claim 1 over Miyata, Davis and Gaalema.

If the Examiner did not rely upon Gaalema to teach controlling start and stop of heating by the heater such that "a temperature of the liquid crystal panel," is "*not more than $\pm 3^{\circ}\text{C}$ of a predetermined target temperature,*" as

required by claim 1, then Applicants respectfully submit that this feature distinguishes claim 1 over Miyata, Davis and Gaalema because the Examiner admits that this feature is not disclosed or fairly suggested by Miyata and/or Davis, taken singly or in combination.

Moreover, assuming the Examiner did not intend to rely upon Gaalema to disclose, "a temperature of the liquid crystal panel," is "*not more than $\pm 3^{\circ}\text{C}$ of a predetermined target temperature*," as required by claim 1, then the combination of Miyata, Davis and Gaalema fails to render claim 1 obvious because none of these references (alone or in combination) disclose or fairly suggest at least this feature of claim 1.

As the Examiner has continually and correctly recognized, Miyata fails to teach or fairly suggest the "heater," or the "heater control means," as required by claim 1. See Office Action at 2-3, see also, December 31, 2007 Office Action at 3, and July 3, 2007 Office Action at 3. The Examiner relies upon column 5 of Davis and Gaalema to teach these features. Id. Applicant continues to disagree that Davis and/or Gaalema do so, taken singly or in combination.¹

Davis discloses a liquid crystal display (LCD) unit including a temperature maintaining means (117, 125, 104, 105). The temperature maintaining means maintains the temperature of the liquid crystal display (LCD) 120 within an operating range notwithstanding ambient temperature and humidity variations. In one embodiment, the temperature maintaining means

¹ To be thorough, further expedite prosecution, and for the sake of clarity, Applicant provides discussions of references separately, however, Applicant is not attacking these references individually, but arguing that the references, even taken in combination, fail to render the claimed invention obvious because all features of claim 1 are not found in the prior art.

(117, 125, 104, 105) holds the temperature of the LCD 120 between 160°F and -35°F (= between 71°C and -37.22°C).

In another embodiment, the temperature maintaining means (117, 125, 104, 105) holds the temperature of the LCD 120 at least between 120°F and -15°F (= between 48.89°C and -26.11°C) with an ambient temperature between 115°F and -40°F (= between 46.11°C and -40°C).

Contrary to the display of claim 1, however, Davis is *silent with regard to any "target temperature,"* and makes no mention of any limits on numerical values of such a "target temperature." Davis merely discloses ranges of temperatures within which the temperature of the LCD is held, *without any mention of a target temperature or limits on variation from such a target temperature within the disclosed temperature ranges.*

Moving forward, according to Gaalema when a temperature reaches a certain preselected level (e.g., target temperature of 40°), differential amplifier 40 has no output and the heating arrangement 24 is not turned on. However, as the temperature decreases below 40°, the output from differential amplifier 40 increases thereby activating the control heating arrangement 24. When activated, the heating arrangement 24 heats the liquid crystal material 14 disposed over integrated circuit substrate 12.

In Gaalema, both the sensed and the 40° threshold temperature refer to *ambient temperatures*, but not "a temperature of the liquid crystal panel," of claim 1. Moreover, Gaalema is silent with regard to controlling start and stop of heating by the heater such that "a temperature of the liquid crystal panel," is

"not more than $\pm 3^{\circ}\text{C}$ of a predetermined target temperature," as required by claim 1.

Moreover, according to column 5, line 56 – column 6, line 6 of Gaalema, when voltage is applied to sensing arrangement 26, the Wheatstone bridge formed by resistors 32, 34, 36, and 28 causes the voltages at nodes 1 and 2 to vary depending on the resistances of the temperature-dependent resistors 34 and 36. Gaalema discloses a threshold value of 40°C and temperature dependency, but fails to numerically specify a temperature *range* of the liquid crystal panel. Accordingly, Gaalema fails to disclose or fairly suggest a "heater control means for controlling start and stop of heating by the heater, in such a manner as to keep a temperature of the liquid crystal panel to be not more than $\pm 3^{\circ}\text{C}$ of a predetermined target temperature which is *within a range between 33°C and 63°C* ," as required by claim 1.

Further still, Gaalema also fails to disclose or fairly suggest any *controlling of start and stop of heating by the heater*, and thus, fails to disclose or suggest at least a "heater control means for *controlling start and stop of heating by the heater*," as required by claim 1.

For at least the foregoing reasons, claim 1 distinguishes over Miyata, Davis and/or Gaalema, taken singly or in combination. Independent claims 7 and 13 distinguish over Miyata, Davis and/or Gaalema for at least somewhat similar reasons. Claims 2, 4-6, 8, 10-12, 14 and 16-22 distinguish over Miyata, Davis and/or Gaalema at least by virtue of their dependency from Claims 1, 7 or 13.

FURTHER PRIOR ART REJECTION

The Examiner also continues to reject claims 3, 9 and 15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Miyata, Davis, Gaalema and further in view of U.S. Patent No. 7,106,287 ("Ham"). This rejection is respectfully traversed.

In response to Applicant's argument that Ham fails to disclose a look-up table arranged so as to correspond to the target temperature, the Examiner states:

The sensed temperature is going to correspond to the target temperature because the LCD panel is to be maintained at the target temperature. Therefore, the look-up table will be arranged to correspond to the target temperature since the values would be specific to that temperature.

Office Action at 14.

But, Ham does not disclose that the look-up tables 64a - 64n "arranged so as to correspond to the target temperature," as required by claim 3. The Examiner's statement that "[the] sensed temperature is going to correspond to the target temperature because the LCD panel is to be maintained at the target temperature," and thus, "the look-up table will be arranged to correspond to the target temperature," is merely conclusory, without rational explanation.

Applicant fails to understand how Ham's disclosure of look-up tables 64a - 64n that, at most, store modulating data for each temperature interval within a temperature range and receive the most significant bits of source data, constitutes a look-up table, "arranged so as to correspond to the target

temperature," which is a predetermined target temperature "within a range between 33°C and 63°C," as required by claim 3, for example. The switch 65 of Ham merely selects modulating data from one of a plurality of look-up tables 64a-64n based on temperature. Ham does not disclose or suggest that the arrangement of these look-up tables corresponds to any target temperature for an LCD.

For at least the foregoing reasons, claim 3 is patentable over Miyata in view of Davis, Gaalema and/or Ham. Claims 9 and 15 are patentable over Miyata, Davis, Gaalema and/or Ham for at least somewhat similar reasons.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1-23 in connection with the present application is earnestly solicited.

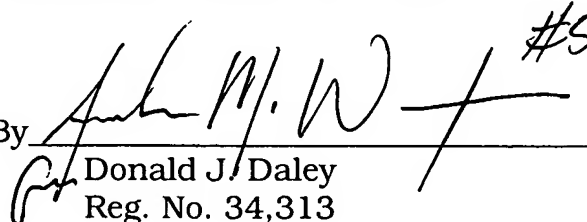
If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Andrew M. Waxman, Reg. No. 56,007, at the number of the undersigned listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, PLC

By


Donald J. Daley
Reg. No. 34,313

#56,007

DJD/AMW:aem

P.O. Box 8910
Reston, VA 20195
(703) 668-8000